



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,630	02/26/2007	Fred Kappertz	KAPP3001/EJD	1986
23364 7590 10/08/2008 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
DUNLAP, JONATHAN M				
ART UNIT		PAPER NUMBER		
2855				
MAIL DATE		DELIVERY MODE		
10/08/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,630

Applicant(s)

KAPPERTZ ET AL.

Examiner

Jonathan Dunlap

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on August 18, 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

FINAL ACTION

Information Disclosure Statement

1. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a). Applicant has not submitted English abstracts for the Foreign cited documents.

Claim Objections

2. Claim 20 is objected to because of the following informalities: “forming at least one groove...toward the human” should be rewritten to recite --forming at least one groove in a wall of said carrier tube, which is open toward the lumen of said carrier tube--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 11-12 and 14-16, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Frey et al. (PG-PUB 2002/0033054 A1).

Considering claim 11, Frey discloses a magneto-inductive flow sensor for a fluid flowing in a pipeline, comprising:

- a measuring tube **1** for conveying the fluid (**Figures 1-2; [0127]**);
- a magnetic circuit **2** arrangement arranged at said measuring tube **1** for producing and guiding a magnetic field, which induces an electric field in the flowing fluid (**Figures 1-2; [0127]**); and
- measuring electrodes **3,31,32** for tapping a voltage from the electric field (**Figures 1-2; [0182]**);
- wherein said measuring tube **1** includes a carrier tube **11** and a liner **12**, especially a tubular liner, of insulating material accommodated in a lumen of said carrier tube (**Figures 1-2; [0129]**); and

- at least one groove **111,112** formed in a wall of said carrier tube **11**, which is open toward the lumen of said carrier tube (**Figures 3a, 3b; [0153-156]**).

Considering claim 12, Frey discloses that said measuring tube includes:

- an open-pored support skeleton **13** embedded in said liner **12** for stabilizing said liner (**[0129]**); and
- said at least one groove **111,112**, is at least partially so filled by a material, especially a sintered material, of said support skeleton, directly sintered in said carrier tube (**[0129]; [0153-156]**); and
- said support skeleton **13** is connected by shape interlocking with said carrier tube **11** (**[0153-156]**).

Considering claim 14, Frey discloses that a ridge is formed on said support skeleton **13** corresponding to said one groove **111,112**, and said ridge is comprised, at least in part, of the material of said support skeleton **13** and extends into said one groove **111,112** (**Figures 3a, 3b; [0153-156]**).

Considering claim 15, Frey discloses that said carrier tube **11** further has an additional groove **other of 111,112**, spaced from said one groove **first of 111,112**, formed in a wall of said carrier tube and open towards the lumen of said carrier tube (**Figures 3a,3b**).

Considering claim 16, Frey discloses that said at least one groove **111,112**, is at least partially so filled by insulating material **12** of said liner, that said liner is connected with said carrier tube by shape-interlocking (**Figure 3e; [0157]**).

Considering claim 18, Frey discloses that said first groove **111,112** is embodied as an annular groove extending essentially coaxially with the wall of said carrier tube **(Figures 3a,3b; [0153-156]; Cylindrical area is coaxial and annular)**.

Considering claim 20, Frey discloses a method for manufacturing a measuring tube for a flow sensor comprising a measuring tube which includes a carrier tube and a liner, a magnetic circuit arrangement, and measuring electrodes, which method comprises the steps of:

- forming at least one groove **111,112** in a wall of said carrier tube **11** which is open toward the lumen of said carrier tube;
- producing a support skeleton **13** in the lumen of the carrier tube **11**; and
- introducing the liner **12** into the lumen of the carrier tube;
- wherein for producing the support skeleton **13**, loose sinter starting material is so charged into the lumen of the carrier tube, that it at least partially fills the at least one groove **111,112**, and the charged sinter starting material is sintered within the carrier tube; and
- for introducing the liner **12** into the lumen, insulating material is allowed to penetrate at least partially into the produced support skeleton and is allowed to solidify in the lumen of the carrier tube, after the sinter starting material has been sintered within the carrier tube **([0129-0157])**.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 13, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frey et al. (PG-PUB 2002/0033054 A1) in view of Schmooch (US Patent 4,388,834).

Considering claim 13, Frey fails to disclose that said at least one groove has a backcut, which is so filled by material of said support skeleton that a radially effective shape interlocking is formed between said support skeleton and said carrier tube.

5. However, Schmooch teaches the use of a backcut in the wall of a tube that is filled with a connecting material (**Figures 10-12; Column 4, lines 45-53**).

The invention by Frey is directed towards a magneto-inductive flow sensor having a groove in the wall of the inner tube for incorporation of a sintered material. The invention fails to disclose that the groove has a backcut. The invention by Schmooch teaches the use of a backcut in order to more reliably connect two elements of an electromagneto-inductive flow sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to be obvious to one of ordinary skill in the art at the time the invention was made to use the backcut groove as taught by Schmooch in the invention by Frey. That is, using the known technique of a backcut groove to provide increased connection would have been obvious to one of ordinary skill.

Considering claim 17, Frey fails to disclose that said at least one groove includes a backcut, which is so filled by insulating material of said liner, that a shape-interlocking effective at least radially inwardly is formed between said liner and said carrier tube.

6. However, Schmook teaches the use of a backcut in the wall of a tube that is filled with a connecting material (**Figures 10-12; Column 4, lines 45-53**).

The invention by Frey is directed towards a magneto-inductive flow sensor having a groove in the wall of the inner tube for incorporation of an insulating material. The invention fails to disclose that the groove has a backcut. The invention by Schmook teaches the use of a backcut in order to more reliably connect two elements of an electromagneto-inductive flow sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to be obvious to one of ordinary skill in the art at the time the invention was made to use the backcut groove as taught by Schmook in the invention by Frey. That is, using the known technique of a backcut groove to provide increased connection would have been obvious to one of ordinary skill.

Considering claim 19, Frey fails to disclose that said first groove has an essentially trapezoidally shaped cross section.

7. However, Schmook teaches the use of a substantially trapezoidally shaped backcut in the wall of a tube that is filled with a connecting material (**Figures 10-12; Column 4, lines 45-53**).

The invention by Frey is directed towards a magneto-inductive flow sensor having a groove in the wall of the inner tube for incorporation of an insulating material. The invention fails to disclose that the groove has a substantially trapezoidally backcut.

The invention by Schmoock teaches the use of a substantially trapezoidally backcut in order to more reliably connect two elements of an electromagneto-inductive flow sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to be obvious to one of ordinary skill in the art at the time the invention was made to use the substantially trapezoidally backcut groove as taught by Schmoock in the invention by Frey. That is, using the known technique of a substantially trapezoidally backcut groove to provide increased connection would have been obvious to one of ordinary skill.

Response to Arguments

8. Applicant's arguments filed August 18, 2008 have been fully considered but they are not persuasive.
9. Applicant contends that the expansion portions 111 and 112 of Frey do not meet the limitation of "at least one groove formed in a wall of said carrier tube, which is open toward the lumen of said carrier tube" (See remarks filed August 18, 2008, page 5). As pointed out in this and the previous Office Action, carrier tube **11** features a first and second groove **111,112** in its wall, the groove being opened towards the lumen of the tube **11** (**Figures 3a, 3b; [0153-156]**). Applicant argues that the features of Frey "fail to sufficiently lessen the tendency of the liner and/or the support skeleton to crack and also fail in preventing the support skeleton to twist or shift." (See remarks filed August 18, 2008, page 5). However, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

10. Applicant contends that Schmook fails to teach the use of a backcut to fasten the liner in the carrier tube because Schmook teaches the use of a backcut to connect a metal insert to a plastic electrode. Claims 13, 17 and 19 further limit the function of the groove outlined in claims 11 and 12. The groove, featuring some form of shape interlocking, is shown in the Frey reference as previously cited ([0153-156]). The Schmook reference is used to show that it was known at the time of the invention that backcuts were used in the magneto-inductive flow sensor art to provide better connections between materials which were intended to be and remain connected. It would have been advantageous to one of ordinary skill to utilize a backcut in order to strengthen a connection in a flowmeter, specifically the connection with which the cited portion of the Frey reference, listed above, was directed towards.

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., strength-loss temperature being greater for the carrier tube than that of the support skeleton, etc., see page 6 of remarks filed August 18, 2008) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

12. It is further noted that on page 8 of the specification, references 115,116 are used to reference lateral surface openings as shown in Figure 2, however, on page 9 of the specification, 115,116 are used to reference grooves as shown in Figure 1.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Dunlap whose telephone number is (571) 270-1335. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harshad Patel can be reached on (571) 272-2187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harshad Patel/
Primary Examiner, Art Unit 2855

/J. D./
Examiner, Art Unit 2855
October 6, 2008